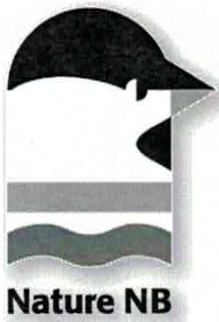


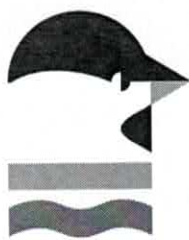
Vol. 38 No. 2 2011



Naturaliste du **NB** Naturalist



Fungus Threatens NB Cave Bats • Mise à jour du Programme Nature NB - Espèces en Péril
Evolution of the Lungwort Lichen



Nature NB

924 rue Prospect St.
Suite 110
Fredericton, NB E3B 2T9

Nature NB is a non-profit, charitable organization whose mission is to celebrate, conserve and protect New Brunswick's natural heritage, through education, networking and collaboration. (The former name of Nature NB – New Brunswick Federation of Naturalists / Fédération des naturalistes du Nouveau-Brunswick is retained for legal purposes.)

Nature NB est un organisme de bienfaisance à but non-lucratif qui a comme mission la célébration, la conservation et la protection du patrimoine naturel du Nouveau-Brunswick par l'éducation, le réseautage et la collaboration. (L'ancien nom de Nature NB, soit « Fédération des naturalistes du Nouveau-Brunswick / New Brunswick Federation of Naturalists », demeurera le nom légal de l'organisme.)

Nature NB (NBFN/FNNB) is a provincial affiliate of Nature Canada (formerly Canadian Nature Federation) and the Canadian Nature Network (CNN).

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Celebration of Birds Nature Club (Gagetown), c/o Bonnie Hamilton Bogart, Roberta MacKenzie, co-chairs, bluriver@nb.sympatico.ca. Information evenings are being held only on the 3rd Wednesday of each month from Jan - April and in the fall from Sept - Nov. Events and Field Trips throughout the year.

Chignecto Naturalists' Club, c/o CWS, Andrew Macfarlane, Box 6227, Sackville, E4L 1G6, 364-5047; meets Sackville Public Library, 7:30 pm, 3rd Mon., Sept.-June.

Club de Naturalistes de la Péninsule acadienne, 1521-4 chemin Cowan's Creek Pokemouche, E8P 2C6; réunions au Club de l'âge d'or Landry, 1^{er} mercredi, sept. à juin; Le Gobe-mouche, mensuel.

Club de Naturalistes Vallée de Memramcook, a/s Valmond Bourque, 12 rue Desbarres, Memramcook, E4K 1E7, 758-1095, www.natureacadie.ca; réunions 2^{ième} mardi du mois, sept. à juin, à l'amphithéâtre de l'école Abbey-Landry, rue Centrale, Memramcook.

Club d'ornithologie du Madawaska Ltée, a/s Musée historique du Madawaska, 195 boul. Hébert, Edmundston, E3V 2S8, 737-5282 (Bert Lavoie); www.umce.ca/com1; réunions à 19h00, 2^{ième} mercredi, sept. à juin, Musée du Madawaska; Le Jaseur, trimestriel.

Club les Ami(e)s de la Nature du sud-est Inc., a/s Normand Belliveau, CP 26024 Moncton, E1E 4H9, 532-4583, ami.e.snature@gmail.com; http://picasa-web.google.com/Ami.e.snature; réunions alternant entre Dieppe et Shédiac, 1^{er} mercredi du mois; excursions 3^{ième} samedi ou dimanche; La Plume verte.

Fredericton Nature Club, Box 772, Station A, Fredericton, E3B 5B4, 366-3079; meets Stepping Stone Centre, 15 Saunders St., 7:00 pm, 1st Wed., Sept-May; newsletter.

Kennebecasis Naturalist Society, c/o Ms H. Folkins, 827 Main St., Sussex, E4E 2N1; meets St. Paul's United Church Hall, 7:30 pm, 4th Mon., Sept-June; quarterly newsletter.

Miramichi Naturalist Club, President: Leonel Richard, 773-3774; lrichard@nbnet.nb.ca; www.miramichi-naturalistsclub.ca; meets 6:30 pm, 2nd Mon. in the Friendly Neighbor Senior Citizen Centre, Sutton Rd.

Nature Moncton, PO Box 28036, Moncton, NB E1C 9M1, Info Line: 506-384-6397; www.naturemoncton.org; Meets Church of the Nazarene, 21 Fieldcrest Drive, 7 pm, 3rd Tues., Sept-June; Monthly newsletter.

NB Botany Club / Club botanique du N.-B., c/o Richard Fournier, Faculty of Forestry, Université de Moncton, 165boul Hébert, Edmundston, E3V 2S8, 737-5050 etx 5258, organizes 5-8 outings/year, AGM in September. www.mace.com/botanyclub/home/html.

Restigouche Naturalists' Club, c/o Mike Lushington, 214 Rosebery Street, Campbellton, E3N 2H5, 684-3258; meets Village-Campbellton Nursing Home, 7 pm, 1st Monday.

Saint John Naturalists' Club, 7 Bridle Path Lane, Rothesay, E2E 5S7; meets N.B. Museum at Market Square, 7:30 pm 2nd Mon., Sept-May, elsewhere in June; monthly newsletter www.saintjohnnaturalistsclub.org.

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Photo: Christopher Clunas

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Nature News / Info Nature

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November to January / novembre à janvier - vacant

February to April / février à avril - vacant

May to July / mai à juillet - Janet MacMillan, janetmac@nbnet.nb.ca

August to October / août à octobre - Pierrette Mercier, 737-1376, petem@globetrotter.net

Members of Nature NB are encouraged to send their nature observations to the compilers who submit regular reports in the NB Naturalist.

SVP, si vous êtes membres de Nature NB faites parvenir vos observations nature aux compilateurs qui rédigent des rapports réguliers dans le Naturaliste du NB.

Please submit articles for the next issue by **July 31, 2011.**

S.v.p. soumettre les articles pour le prochain numéro avant le **30 juillet, 2011.**

To / à Janet MacMillan, janetmac@nbnet.nb.ca

Sincere thanks to our many volunteers who contributed to this publication.
Merci beaucoup à tous les bénévoles dévoués qui ont contribué à cette publication.

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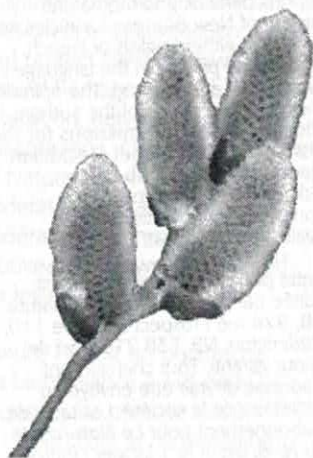
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 **naturenb.ca**

Naturaliste du NB 55

President's Message

Gart Bishop



Changes

It is Easter morning as I write; daffodils, bloodroot, and trout lilies are in bud. The waterfowl are in migration and the warblers are beginning to show up. The willows are starting to flower. The natural world is waking up, revitalized and ready to bloom, breed, and show its splendour once again.

I am beginning my third year as president of Nature NB, and I wonder if perhaps we are an organization that is still in winter. We are losing some of our clubs, our overall membership is declining, we are having difficulty recruiting members to the board and members to the executive ... we haven't had a fully committed vice president for over ten years. While concerns about nature are increasing, avenues for hands-on learning about our natural world seem fewer and fewer. I hope that Nature NB will, in the next few months, bloom again, and be recognized

as an enjoyable way for New Brunswickers to learn about and embrace the fellow wildlife species of our geographic space.

I invite you all to help. We need to re-invent ourselves, we need to make use of the tools of the day and actively promote wildlife in the province. We need not only the ideas as to how and what to change, but ways to attract those who are interested in implementing such ideas. Please, take the time to write me or tell your club representative what your concerns are and how you think they might be addressed. By the time you read this, the Nature NB board will have met for a two-day meeting in May to initiate how to refresh Nature NB. Perhaps by the time we all meet in Grand Manan for our Festival of Nature, we will be brimming over with ideas and enthusiasm. I look forward to hearing from you.

Mot du Président

Gart Bishop

Changements

En m'asseyant pour écrire ces lignes, en ce beau matin de Pâques, je sais que les jonquilles, les sanguinaires et les érythrones sont en bourgeons. La sauvagine est en migration et quelques parulines sont apparues. Les saules commencent à fleurir. La nature se réveille, reprend ses forces et s'apprête à recréer sa splendeur encore une fois.

J'entame ma troisième année en tant que président de Nature NB, et me demande si nous ne sommes pas nous-mêmes un peu en hiver. Nous avons

perdu des clubs, notre adhésion est en déclin, nous connaissons des difficultés à recruter des représentants pour le conseil d'administration ainsi qu'à l'exécutif ... nous n'avons pas pu compter sur un vice-président vraiment engagé depuis 10 ans. Alors que les préoccupations au sujet de la nature ne font qu'augmenter, les chances d'en apprendre de façon concrète sur le monde naturel qui nous entoure semblent diminuer. Mon espoir, c'est que dans les prochains mois, Nature NB va se mettre à refleurir à son tour et sera recon-

nue comme un outil puissant pouvant aider les gens du Nouveau-Brunswick à en apprendre toujours plus sur notre espace géographique et les espèces sauvages avec qui nous devons apprendre à cohabiter.

Je vous invite tous à mettre l'épaule à la roue. Nous devons nous réinventer. Nous devons utiliser tous les outils modernes possibles pour faire la promotion de la magnifique nature de cette province.

Nous devons non seulement faire bourgeonner des idées de changement, mais aussi trouver comment les appliquer. Et surtout, nous devons attirer à nous tous ceux et celles qui veulent participer à ces

changements et à l'épanouissement de ces idées. S.V.P., prenez un peu de temps pour m'écrire ou discuter avec votre représentant de club des sujets qui vous préoccupent et sur les moyens qui vous semblent nécessaires pour y répondre.

Lorsque vous lirez ces lignes, le conseil de Nature NB se sera déjà réuni pour 2 jours en mai afin d'initier le renouvellement de Nature NB. J'ai espoir que lorsque nous nous rejoindrons tous sur Grand Manan pour Le festival de la nature, ce sera avec enthousiasme et plein d'idées nouvelles. J'ai hâte d'entendre vos idées.


Hummingbirds

Last Spring 2010, somewhere on the Pacific side of our enormous North American continent, a very tiny egg, the size of a pea, opened to release a tiny Anna's Hummingbird hatchling. Nurtured on the nectar of Pacific flowers, such as "Salmonberries", the bird matured into a handsome young male. He resembled our Ruby-throated Hummingbird, but a bit larger, with green back, whitish belly and the top of his head green with some purple feathers. His throat was already purplish red. Had he matured to full adulthood, his throat as well as the entire forehead would be of brilliant purple-red. Our little bird, who much later was named "Little Bruce" or "L B" for short, probably enjoyed life frolicking with other hummers, not knowing what destiny might be in store for him or how he should find himself on an Atlantic-coast peninsula in Newfoundland.

He arrived at a place called Brownsdale, a small village by Trinity Bay on the

Avalon Peninsula. Brownsdale is so far northeast, that it rarely, if ever, visited by hummingbirds, let alone an ANNA's! Two women sat outdoors enjoying the late summer sunshine and the flowers in the garden, which have a short time to bloom. Suddenly, one of them spotted a hummingbird. Being a visitor from Alberta, she was familiar with hummers but the other local woman could hardly believe her eyes. They drove to the nearest hardware store where, to their delight, they found a hummingbird feeder. The women, happy the hummer had made his appearance and accepted the feeder as a source of food, were delighted. The bird became a great source of entertainment for local people. Not knowing much about birds, they assumed it was a stray.

This happened in August. As flowers began to get scarce in September, the bird didn't seem interested in migrating. He still relied on the feeder as his source of food. Through October, November,



Mary Majka
Mary's Point

December - regardless of cold and windy days - the hummer came regularly to the feeder. Two feeders were used. One feeder was outside for the bird, while the other was warmed for hanging up as soon as the outdoor one began to freeze. This process required a "bird sitter" all day long. Two sisters, living across the road, provided this service joyously, but when the snow started to fly, they started to wonder.... "Is a hummingbird really supposed to be here at this time of the year?" Nobody in that area was conducting a Christmas bird count. Otherwise, the compiler would have been surprised to receive a report of 2 blue jays, 8 crows, 25 chickadees, and 1 hummingbird.

Finally, the sisters decided to get some advice and contacted Bruce Mactavish. Bruce has a weekly column in the St. John's *Telegram* about birding. As one can imagine, he was more than surprised to hear the news. A picture of the bird at the snow-covered feeder convinced him the hummingbird was not a figment of somebody's imagination. Bruce drove two hours from St. John's

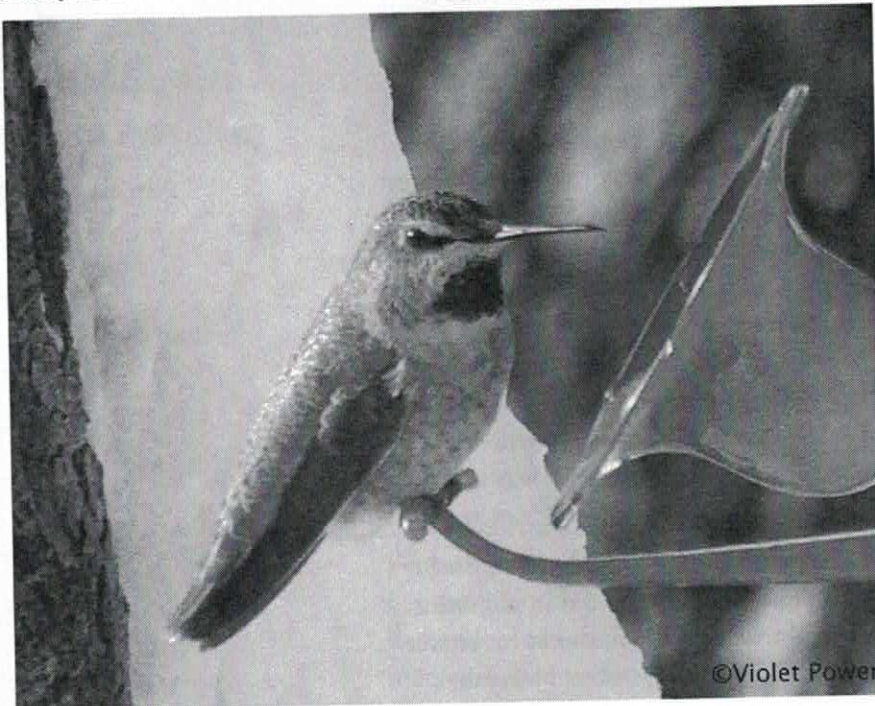
to Brownsdale to not only see the bird, but also to solve part of the mystery (although the other part, how the bird came to be there, will never be solved). We do know the Anna's Hummingbird is a hardy type and does over winter in the southern coastal parts of B.C., where occasionally there is some snow.

Bruce's identification of the bird as an immature male Anna's Hummingbird caused quite a stir in the naturalist community. A lot of birders and even a CBC television crew arrived to give L B (so named after Bruce) his "15 minutes of fame."

The story was spreading. More and more people were now disturbing the bird by trying to get better pictures and views of L B. Finally, the birders were asked to stop their too close visits.

What concerned me was the food that the bird was getting. Because of the lack of flowers and tiny insects that a hummer consumes, it was only getting calories from sugar. I was able to get some special food for hummingbirds that also contains vitamins, minerals and proteins and was anxiously awaiting news of its arrival in Brownsdale from Montreal. On the 7th of February I got news that L B did not appear at the feeder all day. On the 8th the parcel with the food arrived. Too late! The bird might not have survived anyway, but there was a chance since it got a bit milder in Newfoundland. All those who rooted for L B were saddened for the little fellow who DID NOT MAKE IT.

Hummingbird
Photo by V. Power



©Violet Power

After the Storm - Flowerpot Rocks, Hopewell Cape

Roger Moore
Island View

On a fine day, the angry sea's fury lies buried in sunshine and the shore birds are allowed to gather and stitch their sewing-machine beaks into the mud and sand. Black-backed gulls fight fiercely for their places in this mud and slab paradise of rough ground sand, this rock-strewn mud bank beach, warming beneath the sun as the tide drains away and the shore stretches its long arm out towards the horizon where the waters meet and mingle, river, bay and sea, to mark land's end, the world's end, the fabled point where earth falls away and the Bay of Fundy is everything: ubiquitous, omniscient, uncaring in its loneliness and splendor. Oh! To be caught there, to be set adrift, to be set free, in the embrace of the all-embracing sea ...

But on a blustery day, the impact of wind and rain, of waves upon the remaining rocks, the shock of the elements, the sea surge as the waves roll up and in and the earth is an anvil to the waves' repeated hammering. The cliffs slowly crumble, break down and dissipate to this chocolate mud that chokes up the river and the bay.

And after the storm, the Flower Pot Rocks lean like abandoned factory chimneys in an industrial landscape. They stand

stark and mark in stone where the Bay of Fundy meets this spark of land. The stone mason currents curve and carve their way through rock and cliff, slicing through the sea end of free fall and scree, undercutting, doubling as pathfinders for the wind and ice that will make the cliffs fall.

First, the thin wedge of the wave driven between layers of sediment, then the sparkle of frost and ice, then a hole, a blow hole, a cave, a key hole, and suddenly, one day, the roof falls down and the scouring sea pours in ... and we are looking at these chimney stacks, wild stacks, with lives of their own, these Mi'kmaq warriors fleeing to safety and stranded here in stone.

What tales they tell, rocked in their cradles by the sea's firm hand, soft on a summer's day, furious in a winter storm, with the gnashing sea seething at the headland ... and the sea itself, rocking in its rocking chair, rising and falling tilting the land, reducing the cliffs to rocks and the rocks to rubble and here, the sea wind whipping the waves, driving the bladder-wrack and kelp to the safety of the shore ... and whose is the hand that will rock the cradle of the sea ...

Botany Corner

Gart Bishop
Sussex

Chokecherry (*Cystoptère bulbière*) *Prunus virginiana*

Chokecherry (*Prunus virginiana*) is a familiar shrub and small tree found throughout New Brunswick, especially along margins of fields, roadside, and in areas of disturbance. It has a multitude of other names, such as: eastern chokecherry, western chokecherry, California chokecherry, wild cherry, wild black cherry, black chokecherry or chokeberry, rum chokecherry, whiskey chokecherry, chuckley-plum, sloetree, cabinet cherry, and in French, cerisier de virginie, cerisier, cerisier a grappes, cerisier sauvage, and caupulin. Distinctive in

the spring with its prolific long white 'bottlebrush' clusters of flowers drooping over the almost fully open leaves, it is just as impressive in August when the red to dark purple berries drape the bushes. The tart, sour taste of the berry appropriately explains its common name.

Chokecherry might be confused with Black Cherry (*Prunus serotina*), which has similar clusters of flower and fruit but is usually more than 6 m high and has longer, narrower leaves (see figure 1). Pin Cherry (*Prunus pensylvanica*) is of similar size and habitat, and can be distinguished by its small clusters of flowers all coming from a common point, somewhat like a group of pins from a very small pin cushion. Pin

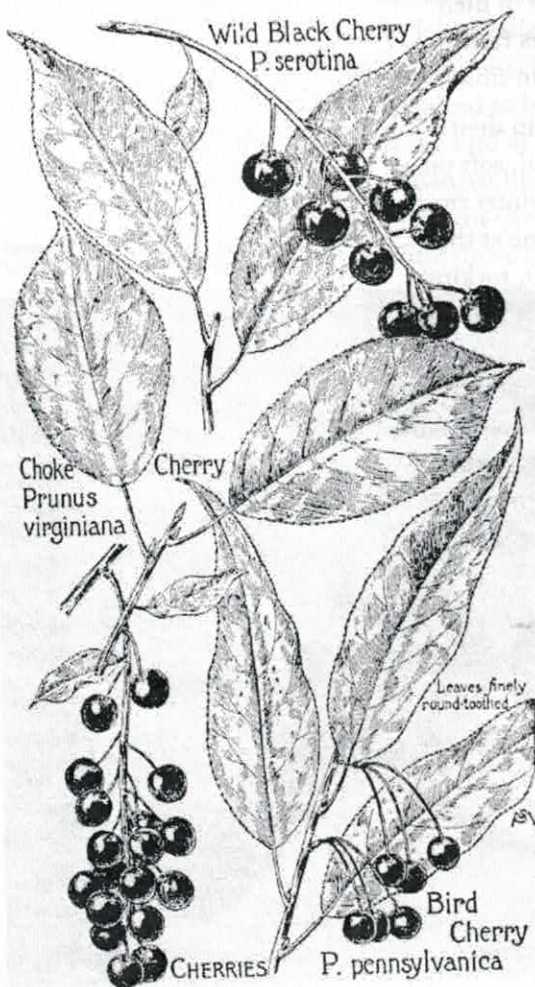
Cherry also differs by having long narrow leaves (lanceolate) like Black Cherry.

Chokecherry is most commonly found as a shrub up to 4 m high, but it can reach up to 8 m in height and have a trunk diameter of 20 cm. Its leaf is shaped roughly like that of an inverted egg, being broadest beyond the middle toward the abruptly pointed tip, and has a finely toothed margin. Like all our cherries, there are usually one or two small glands where the leaf blade joins the stem (see figure 2). The reddish bark with horizontal flecks (lenticels) of young cherries looks similar to that of young birch and speckled alder.

An easy way to identify cherry trees is by the unattractive but distinctive 'warty' presence of black knot fungus (*Apiosporina morbosum*) that is frequently found on branches (see figure 3). Common on Chokecherry, and less so on Pin Cherry and Black Cherry, these disfiguring galls take several years to develop, eventually resulting in stressed plants. If the fungus girdles the trunk, it can kill the tree. The fungus is spread by wind from April to June.

Chokecherry and Pin Cherry are commonly present in areas following fires. Once a single plant is established (often through seed dispersal by bird or animal) a Chokecherry colony can quickly be established through vigorous rhizome (underground stem) growth. It also suckers easily if older stems are cut down. Chokecherry plants live up to 25 years but are not shade tolerant, so their demise in forest stands is often brought on as the other trees overtop them.

Figure 1: Different types of Cherries
Drawing by F.S. Mathews



The five petaled flowers are principally insect pollinated and give off an unpleasant fragrance. They are usually abundant and as the petals fall, the ground beneath becomes covered with a natural confetti. The fruit are easily harvested by loosely closing your hand at the top of the cluster and pulling down.

The leaves, fruit pits, and bark contain hydrocyanic acid (bad stuff for us humans to eat) and although various folk remedies suggest using them, they might best be avoided. Boiling the fruits and straining off the juice using a sieve or jelly bag will provide you with an excellent base for wines, jellies, or syrups. While the large seeds are tricky to extract from the fresh berries, the result can be a tasty pie.

The fruit of Chokecherry was an important ingredient in many Native American diets. The bark of its root was used to ward off cold, fever, and stomach maladies (Wikipedia) as well as for treating colds, fevers, and pneumonia, and has a long history of use in cough syrups. The fruit was mixed with bear grease to make paint for coloring pictographs.

The Chokecherry fruit is the official fruit of the state of North Dakota where it has been frequently found in

archaeological sites. There are several cultivars available at nurseries, and Chokecherry is often incorporated into suburban landscapes for its flowers and fruit. It was introduced in Europe in the mid-eighteenth century.

Chokecherry is a frequent host of the tent caterpillar and other butterfly and moth larvae. All our wild cherries are consumed by wildlife, but the Chokecherry is the most prolific in New Brunswick making it an important food source. A wide variety of birds such as Robins, Starlings, Blue Jays, Ruffed Grouse, and various woodpeckers enjoy the cherries, as well as bear, beaver, fox, raccoon, skunk, squirrels and chipmunks, and deer. The twigs and bark are also browsed by hares, squirrels, deer, and moose. The small shrubs are frequently used for nesting by songbirds and serve as wind-breaks along road and field margins.

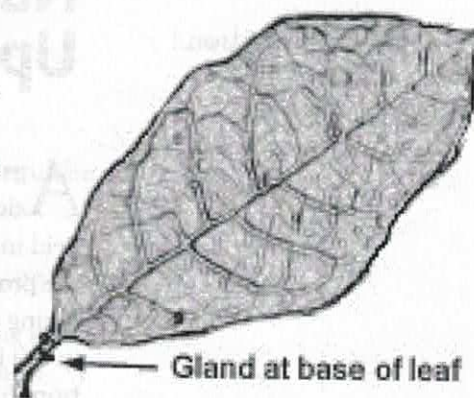


Figure 2: Glands at base of leaf blade
Drawing by G. Bishop

Figure 3: Black Knot fungus
Photo by Hilton Pond Center



References

- Hinds, H.R. 2000. The Flora of New Brunswick. Biology Department of UNB, Fredericton, NB
- Hilton Pond Center (photo of Black Knot)
- Martin, A.C, H.S. Zim, and A.L. Nelson. 1951. American Wildlife and Plants. Dover Edition 1961 by General Publishing Company, 30 Lesmill Rd, Don Mills, Toronto, ON.
- St-Pierre, R.G. 1993. Biology & Culture Of The Chokecherry, *Prunus virginiana* L. var. *melanocarpa* (A. Nelson) Sarg.; Rosaceae. The Chokecherry - A Guide For Growers. Department of Horticulture Science, University of Saskatchewan, Saskatoon. First Edition. 33 pp <http://www.prairie-elements.ca/chokecherry.html>
- Turner, N.J. and A.F. Szezewinski. 1979. Edible Wild Fruits and Nuts of Canada. National Museum of Natural Sciences, Ottawa, ON.
- Wikipedia 2011: http://en.wikipedia.org/wiki/Prunus_virginiana

Lewnanny Richardson
and Nathalie Paulin
Rivière-à-la-Truite

Nature NB - Species at Risk Update

Again this year, the Nature NB - Species at Risk program will be in the field to continue species at risk recovery in the province. We are now approaching the piping plover season and will participate in the international piping plover survey from June 4 to June 17, 2011. This survey is conducted every five years to determine the situation of the plover throughout North America. To do so, we have to cover 33 beaches over the entire Acadian Peninsula. Some of those beaches are only accessible by boat, giving surveyors an unusual opportunity to discover a taste of paradise (as we call the Tabusintac area). We invite volunteers to join us. We are ready to welcome you onboard for this indescribable experience. During these surveys, we have to determine the plover population and much more. This winter, over 600 plovers were banded in the U.S. after the major oil spill in the Gulf of Mexico. We will have to look closely and watch for those bands. We also need to pay particular attention to the possibility of oil debris on their plumage and to predators. Please join us this year for an experience you'll never forget.

Beach cleanup
Photo by L. Richardson



We are still watching closely over the Gulf of St. Lawrence Aster population, as well as the common tern, gull, and cormorant colonies. These areas are significant because we have practically the most important populations of these species. We will pay close attention to their habitat following the two major storms that hit the New Brunswick coastline in December 2010.

As for our chimney swift program, we are still continuing to evolve strategies to better understand and protect the species. New this year, we are monitoring the temperature inside a tower in Paquetville. This is mostly done to demonstrate the difference of the temperature inside and outside the tower. We will also work on educational material to raise awareness about this species. We plan to have a poster and a pamphlet ready for next year. We are also now putting in place a chimney swift and Nature NB educational display to raise species at risk education in the Cambridge-Narrows community. The scouts of Sheila have helped us in the establishment of a tower for the chimney swift in the Pokemouche area.

As you can see, we are always active in species recovery programs and will continue to do so for the upcoming years. Your support by being a Nature NB member is crucial and very important for our programs. The species at risk biologists wish you the best discoveries and are ready to welcome you onboard this summer.

Mise à jour du Programme Nature NB - Espèces en Péril

Lewnanny Richardson et
Nathalie Paulin
Rivière-à-la-Truite

Le programme Nature NB - Espèces en Péril sera encore une fois actif sur le terrain cette année afin de rétablir les espèces en péril de la province. La saison du Pluvier siffleur approche à grands pas et cette année, comme à tous les 5 ans, sera l'année du recensement international tenu du 4 au 17 juin 2011. Cet important recensement sert à déterminer le statut de la population nord-américaine du Pluvier siffleur. Nous devons visiter 33 plages afin de couvrir entièrement la Péninsule acadienne. Certaines régions sont seulement accessibles par bateau donnant une opportunité aux recenseurs de découvrir des endroits magnifiques, comme la région de Tabusintac, souvent appelée le paradis des pluviers. Si vous souhaitez participer à un recensement, nous sommes prêts à vous accueillir dans cette expérience hors du commun. Avec ces recensements, nous devons déterminer la population et plusieurs autres critères. Cet hiver, près de 600 pluviers siffleurs ont été bagués au E.U. suite au déversement de pétrole dans le Golf du Mexique. Lors de nos observations, nous devons regarder pour des bagues et à la possibilité de voir des taches de pétrole sur le plumage des pluviers, tout en y incluant les prédateurs et autres données concernant l'habitat. Si l'expérience vous tente, s'il vous plaît joignez-vous à nous pour une expérience inoubliable.

Comme autres activités, nous continuons à surveiller les populations d'Aster du Golfe St-Laurent, les colonies de sternes, de goélands et de cormorans, étant donné que ces espèces sont retrouvées en grande quantité dans la Péninsule acadienne.

Nous porterons une attention particulière à leur habitat suite aux deux grosses tempêtes qui ont frappé les côtes du Nouveau - Brunswick en décembre 2010.

Pour ce qui est de notre programme sur les Martinets ramoneurs, nous continuons à étendre nos connaissances afin de mieux comprendre et protéger ceux-ci. Nouvelle cette année, nous enregistrons la température à l'intérieur et à l'extérieur d'une tour afin de pouvoir comparer les fluctuations avec l'environnement. Nous travaillerons aussi sur l'élaboration de matériel éducatif, tels un dépliant et une affiche qui seront prêts pour l'an prochain. Nous sommes en cours d'installation, dans la région de Cambridge-Narrows, d'un centre éducatif sur le martinet et de Nature NB afin de sensibiliser la communauté envers les espèces en péril. Les scouts de Sheila sont également très actifs et ont aidé à l'installation d'une tour de nidification du Martinet ramoneur sur une de leurs propriétés dans la région de Pokemouche.

Comme vous pouvez le constater, nous sommes toujours très actifs dans le rétablissement des espèces en péril et nous continuerons à faire de même dans les années à venir. Votre appui en tant que membres de Nature NB est crucial et très important pour notre programme. Les biologistes du programme Espèces en Péril vous souhaitent les plus belles découvertes et sont prêts à vous accueillir à bord de leur équipe cet été.

Observation des pluviers siffleurs
Photo par L. Richardson



Karen J. Vanderwolf
Fredericton

"White-nose syndrome ... the most precipitous decline of North American wildlife in the past century." - From a 2010 on-line petition urging the United States Fish and Wildlife Service to implement a national plan to combat white-nose syndrome in bats.

White Death Threatens New Brunswick Cave Bats

It was the middle of March 2011 as we hiked up a steep hill in deep snow to census bats. As part of my master's thesis with Dr. Donald McAlpine (New Brunswick Museum) and Dr. Graham Forbes (University of New Brunswick), I have spent the last two winters visiting New Brunswick caves and abandoned mines and counting the number of bats hibernating in these sites. This day was particularly exciting as Donald McAlpine and I were about to visit the cave with the largest number of hibernating bats in New Brunswick. However, once at the cave entrance, I noticed a bat crawling on the snow. We were very surprised at this, as bats cannot tolerate freezing winter temperatures outside of caves, especially since their food source, insects, are absent at this time of year. I followed the aberrant bat and encountered two more bats - but these were dead. A quick search of the area turned up 23 more bat bodies. As we entered the cave, the full scale of what was happening hit us. Bat carcasses littered the floor and the cave smelled of death and decay. Normally, overwintering

into the ice, while others hung dead on the walls nearby. Deeper in the cave, the number of bats alive on the walls exceeded the number of carcasses, but even here, bats were clearly in trouble. Some of the bats still alive were on the floor among the bodies, too weak to fly, but not too weak to call. Bats were literally dropping off the walls in front of us as we completed the census. We counted over 1200 carcasses on the floor (Fig. 1) and over 4800 bats on the walls, some of which were also dead. Many of the bats had a white fungal growth spotting the muzzle and wings (Fig. 2).

In 2006, bat researchers in New York State noticed a previously undocumented white fungal growth on the noses of hibernating bats. Many dead bats with white noses were found the next winter, with mortality reaching 100% in some caves. This phenomenon has come to be known as white-nose syndrome (WNS), or more technically, as *Geomyces*. It has since spread to 16 states, and was found in Ontario and Quebec in the winter of 2009-10. The discovery my advisor and I made while visiting caves in March 2011 was the first documented case of WNS in the Maritimes. The rapid spread of this disease may in part be due to human vectors, but it is more likely that bats themselves are the principal means by which the disease is spread. Bats may fly 50-100 kilometres or more from summer to winter roosts in order to find secure places for hibernation. It is estimated that more than one million bats have perished so far; worse still, the regional extinction of some bat species is predicted, particularly New Brunswick's

Figure 1. More than 1200 dead bats littered the floor of the largest New Brunswick bat hibernaculum where white-nose syndrome was discovered.
Photo NB Museum/D. McAlpine



bat populations are found deep in cave chambers and passages where the temperature is stable and above freezing year round. But on this visit, many of the bats were congregated near the cave entrance where ice was present. Some carcasses were frozen

most common species, the Little Brown Bat (*Myotis lucifugus*). Some researchers have suggested the disease has caused the most rapid decline of North American wildlife in recorded history. The impact of such mortality will be compounded in the long term due to the long lifespan (up to 35 years) and low reproductive rate of bats (generally one pup/year/female). The reduction or extinction of bat populations could lead to increased insect populations, thus affecting agriculture, the environment, and human health.

WNS has been found on nine bat species in North America. Affected species that occur in New Brunswick include the Little Brown Bat (*Myotis lucifugus*), Northern Long-eared Bat (*M. septentrionalis*), Tricolored Bat (*Perimyotis subflavus*), and Big Brown Bat (*Eptesicus fuscus*). The first two are the most common bat species in New Brunswick, and it is in these species that the greatest WNS-associated mortality has been documented, both in New Brunswick and in North America generally. The other three bat species that occur in New Brunswick, the Hoary Bat (*Lasiurus cinereus*), Red Bat (*Lasiurus borealis*), and Silver-haired Bat (*Lasionycteris noctivagans*), migrate south for the winter and do not hibernate in caves. This means they are unaffected by WNS.

Once back in the New Brunswick Museum (NBM) lab, Dr. David Malloch, a noted fungal specialist and NBM Research Associate, and I, were able to confirm the presence of the fungal species associated with WNS based on microscopic features of the fungus reproductive structures. Dr. Scott McBurney, Canadian Cooperative Wildlife Health Centre (CCWHC), Atlantic Veterinary College, University of Prince Edward Island, confirmed the diagnosis on the basis of histology and genetic analysis, the latter completed at

the CCWHC, University of Guelph. On the basis of genetic sequences archived in Genbank, Dr. Sarah Hambleton, Agriculture Canada, Ottawa, also confirmed the diagnosis and determined that the fungus on New Brunswick bat wings is the same genetic strain first described from bats in the United States.

The fungal infection associated with WNS invades, erodes, and digests living skin tissue and then replaces connective tissue, glandular structures, muscle fibers, blood and lymphatic vessels, and hair follicles with fungal hyphae. This causes major damage to the bats' wings, such that even if individual bats survive the winter, they are more likely to die in the summer. Like all hibernating mammals, the immune system of bats is shut down in the winter so there is nothing to stop the fungus. It is also suspected that the invasive nature of the fungus causes skin irritation. This causes bats to awaken more frequently from hibernation, perhaps to groom, thereby depleting fat reserves required for overwinter survival. With fat reserves depleted, some bats leave hibernation sites in mid to late winter and may be observed flying about in search of insects. Although there are no insects available, these winter flying bats apparently freeze to death before starving. Bodies are often found frozen on the snow or hanging in the open on buildings, emaciated and dehydrated. The fungus associated with WNS can be seen as a white, often fluffy (especially on the nose) growth on any

Figure 2. A dead bat showing evidence of the white nose fungus, *Geomyces destructans*, in the largest New Brunswick bat hibernaculum. Photo NB Museum/K. Vanderwolf.



For more information, check the New Brunswick Museum website at www.nbm-mnb.ca.

Karen J. Vanderwolf is a Master's student at the University of New Brunswick Fredericton working out of the New Brunswick Museum, with the support of the New Brunswick Wildlife Trust Fund, Canadian Wildlife Federation, and the New Brunswick Department of Natural Resources.

exposed skin surface of the bat. However, once a bat leaves the cave this growth is no longer apparent, although the lesions it causes are often visible on the wings.

The fungus associated with WNS, unnamed until 2009, is known as *Geomyces destructans*. It grows best between 3°C and 15°C, and at >90% relative humidity. These are exactly the sort of environmental conditions bats require in a hibernation site. Interestingly, *G. destructans* has been found on bats in several European countries but it does not appear to cause death or sickness there suggesting that Europe may be the source of the *G. destructans* strain now decimating North America bat populations. The lack of European WNS mortality may be due to differences in host immune response, differences in fungal virulence, different environments, differences in microorganism flora and fauna, or differences in host physiology or behavior.

To date there is no cure for WNS. The only management strategy thus far has been to limit human access to caves and abandoned mines in an effort to contain the spread of WNS and to minimize disturbances to hibernating bats. Research is currently underway in an attempt to find a biological control agent for *G. destructans*, such as a fungus or bacteria that limits the growth or kills *G. destructans*, or perhaps an insect or mite that eats the fungus. In order to find such an organism, researchers are currently compiling a list of the fungi and bacteria that naturally occur

on bat skin and testing them against *G. destructans*. Part of my Master's thesis has involved compiling just such an inventory of the fungi that naturally occur on hibernating New Brunswick bats. Before WNS, virtually nothing was known about this area of study in North America, or worldwide. Since we believe the New Brunswick bat-fungal study was completed before WNS hit the province, there is now the unique opportunity of investigating the post-WNS fungi on bats as a comparison. Such a study could provide valuable insights into how *G. destructans* interacts with long established North American communities of fungi naturally present on hibernating bats.

The WNS situation in New Brunswick is still developing and will continue to be monitored by the New Brunswick Museum and the Fish and Wildlife Branch, New Brunswick Department of Natural Resources, over the next few years. We are currently trying to locate funding for further WNS research and monitoring that will allow us to track the impact of WNS on New Brunswick bat populations over the next two to three years. New Brunswick naturalists who may observe winter day-flying bats, or encounter dead or live bats during the winter hibernation period (October-April), are asked to contact me at kjvanderw@gmail.com or Dr. Donald F. McAlpine at the New Brunswick Museum (506-643-2345, donald.mcalpine@nbm-mnb.ca), or the nearest Department of Natural Resources office.

Freshwater Mussel Surveys on the Miramichi River

Kara Baisley
Project Coordinator,
MREAC

Freshwater mussels are an important part of a healthy aquatic ecosystem. As a key component in the structure of freshwater benthic environments, they play a vital role in the composition of aquatic food webs, nutrient cycling and energy flow. They also help maintain water quality as filter feeders. However, freshwater mussels are considered the most threatened taxonomic group in North America.

Although some rivers in New Brunswick have been surveyed for freshwater mussels, few surveys have been done in the Miramichi River watershed until recently. Little was known about which species are present or their abundance and distribution throughout the watershed. Since the Miramichi River watershed is very large at over 13,000km², the Miramichi River Environmental Assessment Committee (MREAC) has committed three summers of field surveys (2008-2010) to understand more about these species, including their variety, population and distribution. Habitat characteristics as well as physical and chemical water quality data were collected at each survey site.

MREAC's freshwater mussel survey project had two objectives: 1) to have a better understanding of freshwater mussel populations and distribution; and, 2) to assess a rare mussel species, the Brook Floater mussel (*Alasmidonta varicosea*). Brook Floaters were known to exist in the Southwest Miramichi River based on work done by freshwater mussel specialist, Ms. Kate Bredin, in 2002 and 2006.

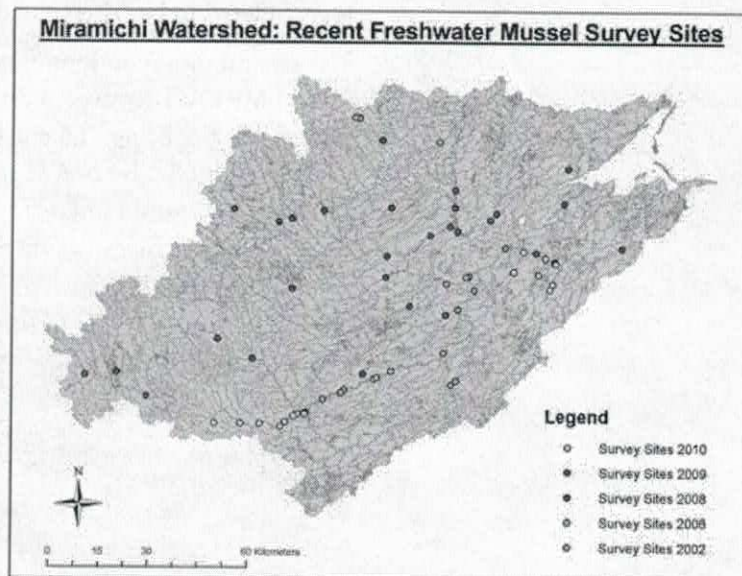
The Brook Floater has recently been assessed (2009) by the Committee on the Status of Endangered Wildlife in Canada

(COSEWIC) and has a National General Status Rank of "special concern" in New Brunswick. In the US, Brook Floater mussels are declining throughout their range due to pollution and alteration of river habitats. The Miramichi River may harbour an important remaining segment of the global population of this species (COSEWIC, 2009).

MREAC has surveyed 45 sites on 22 Miramichi tributaries due to support by the Wildlife Trust Fund. Ms. Bredin was consulted for advice, guidance and training for this project. Additional support was also offered by Ms. Mary Sollows of the New Brunswick Museum. During MREAC's surveys, four species of freshwater mussels were found: Eastern Pearlshell, Eastern Elliptio, Eastern Floater and the rare Brook Floater. However, a fifth species, Eastern Lampmussel (*Lampsilis radiata*), is known to inhabit the Southwest Miramichi River. This mussel was found



Miramichi Mussel
Photo by K. Baisley



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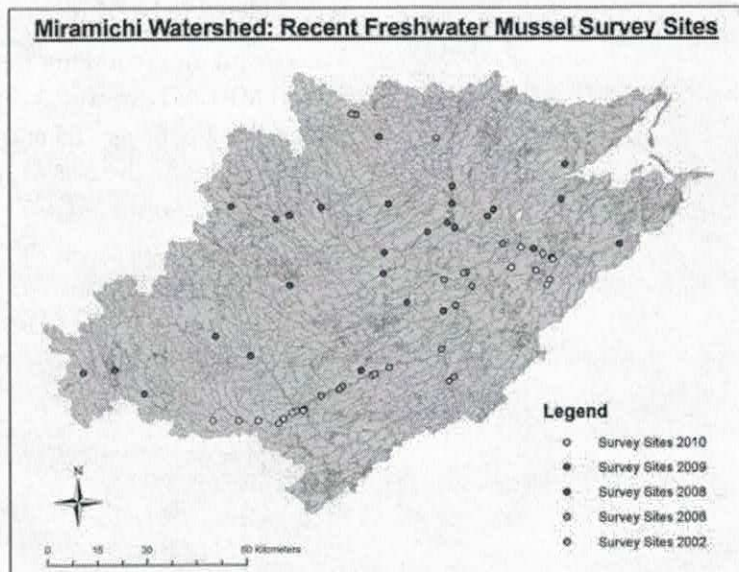
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Miramichi Mussel
Photo by K. Baisley



by Ms. Kate Bredin during her previous survey work. With this species included, the Miramichi River watershed is home to five known freshwater mussel species.

MREAC SURVEY RESULTS

The Eastern Pearlshell (*Margaritifera margaritifera*) is the most abundant freshwater mussel species in the Miramichi River watershed, with 13,448 live specimens counted at 39 of the 45 sites surveyed. This species

has a diverse range of habitats. It was found in the rough, rocky headwaters of the South Branch of the Southwest Miramichi and the calm, slow flowing Barnaby River. The Miramichi River is world renowned for its Atlantic salmon fishing and very popular for trout fishing. Both

of these fish species are common hosts for the Eastern Pearlshell's larval stage. In addition, with limited industrial impacts, the water quality and mussel habitat conditions on most of the Miramichi River is very good. However, the Eastern Pearlshell is considered to be "threatened" globally.

The second most common freshwater mussel MREAC discovered during this project was the Eastern Elliptio (*Elliptio complanata*), with 683 discovered specimens at 11 of the 45 sites surveyed. This mussel species is not as rugged as the Eastern

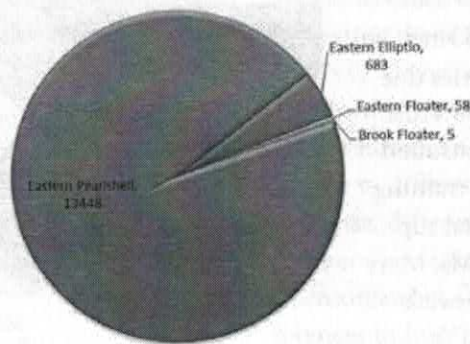
Pearlshell and, therefore, was not found in the rocky, headwater sites. Most of the sites were on the Barnaby River, which is a low gradient, slow flowing river.

A lake species, Eastern Floater (*Pyganodon cataracta*), was discovered at two sites, Guegus Lake and the Napan River. Fifty-seven specimens of this species were found at a slow sandy stretch of the Napan River.

The Brook Floater (*Alasmidonta varicosa*) was discovered during the second and third year of sampling. This mussel was found at three sites with a total number of five live specimens recorded. Even with a concentrated focus on the Taxis and Barnaby Rivers, this species continues to demonstrate its rarity. Consequently, critical freshwater mussel surveys are necessary in order to understand and protect the Brook Floater mussels and their habitat. Miramichi River is becoming increasingly important as a link for the survival of this freshwater species.

MREAC has counted 14,194 mussel specimens during the three years of surveys. Data collected during this project was shared with the NB Museum in order to keep a record of freshwater mussel populations throughout New Brunswick. The data was also shared with COSEWIC in order to be part of future status assessments for the Brook Floater and possibly the Eastern Pearlshell. The latter mussel is currently being investigated as a possible "special concern" species.

MREAC's Freshwater Mussel Totals, 2008-2010



References

COSEWIC. 2009. Assessment and Status Report on the Brook Floater, *Alasmidonta varicosa*, in Canada Committee on the Status of Endangered Wildlife in Canada.

Look Before You Shoot...and Eat!

Mary Majka
Mary's Point

Great excitement seized birdwatchers not only of this province, but also from as far as California, when a very rare Pink-footed Goose from Greenland or Iceland found its way to marshes and fields not far from Cocagne, NB.

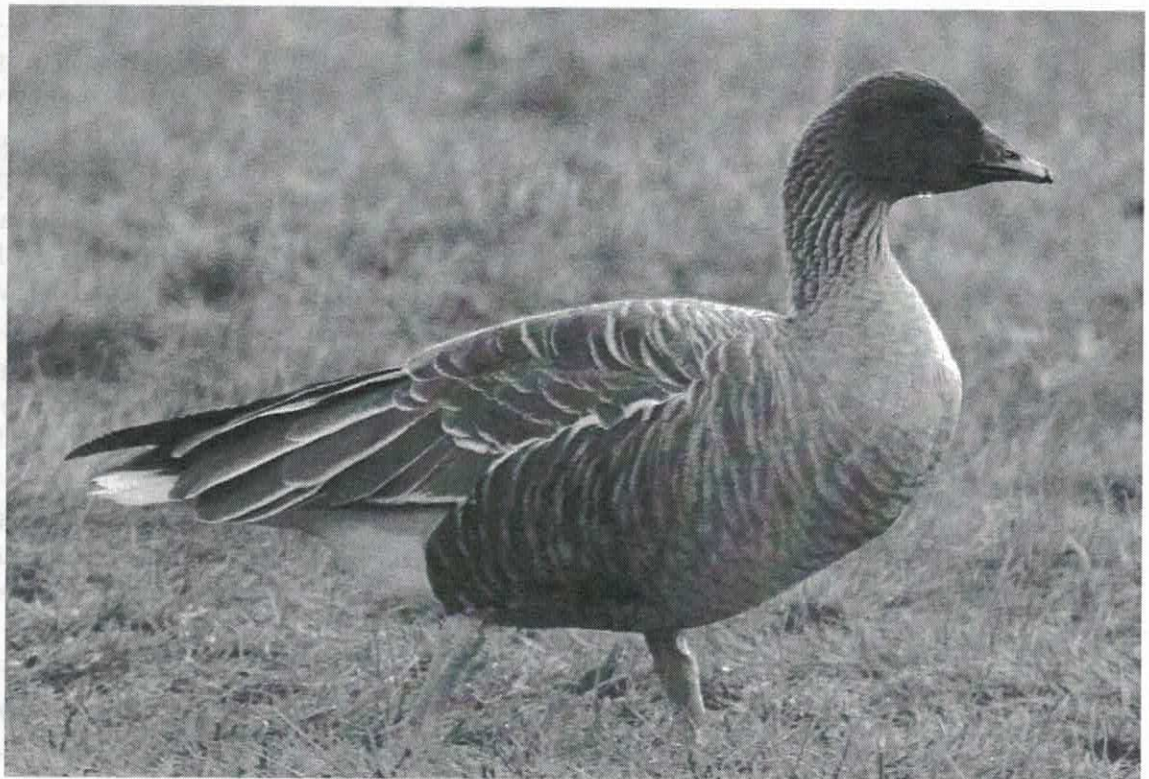
This was a first for our province. Hundreds of naturalists went to see and photograph the very different and handsome bird. In New Brunswick, nobody was tempted to have that rarity for Christmas dinner... until the Goose decided to cross over to Prince Edward Island. Someone was looking, but not thinking: Why not bag something that is different? In the same marsh there must have been Canada Geese bigger and fatter than this rather small, strange-looking bird. The Pink-footed Goose, a visitor from so far away, did not survive, as we had hoped.

After the goose had been shot, it was photographed and then put in a roasting pan. (It was reported to have been very tough.) Not only did the goose not satisfy the dinner guests, but its consumption took away something of value that has much more meaning than having photographs one can brag about to your hunting buddies.

The hunter did report the goose to the PEI Department of Natural Resources...but only AFTER the goose disappeared from the dinner table. Fortunately, some feathers were retrieved and deposited in the NB Museum.

How differently things were handled by a hunter on Grand Manan Island. More alert, before putting a goose he had shot in the pot, he showed it to a well-known birder on the island. This man recognized that the strange goose should be saved as a specimen. It turned out to be a Graylag Goose from Europe. This was the first specimen of this species in North America. The skin of this bird is now in the NB Museum and is important documentation of this bird's movements from one continent to another.

Pink-footed Goose
Photo by S. Tingley



Nature NB
Fredericton

For more information,
visit NatureNB.ca or
call 506-459-4209

Biodiversity Stewardship Program from Nature NB

Hello!

When was the last time you felt that you made a real difference?

When was the last time you felt that you made a real difference, while doing something you love?

WANT TO DO IT MORE OFTEN?

Nature NB is launching the New Brunswick Biodiversity Stewardship Program, an initiative where you can contribute to conserving New Brunswick's natural heritage. The program has two main goals:

1. To Update the Provincial Government's database on Ecologically Sensitive Areas. This database indicates to both government and industry why these sites are important (diversity of plants, animals etc.)
2. To involve New Brunswickers in the Naturalist Community.

WHY SHOULD YOU PARTICIPATE?

Unlike other avenues, updating the Government's EIAs will have a direct impact on what developments get the go ahead and what developments get stopped in their tracks. Your involvement through site information collection will result in greater support for important ecological issues.

Nature NB, with our main partners, the Nature Trust of NB and the NB Department of Environment have been able to incorporate Important Bird Areas (IBAs) and Protected Natural Areas (PNAs) into our Program. The resulting data will contribute to the pool of national data. Most importantly, local NB issues will be brought to the national stage.

HOW CAN YOU PARTICIPATE?

- 1- Visit NatureNB.ca and register as a Biodiversity Stewardship volunteer.

2- Once registered, you can log on and select a site you would like to visit. Sites can be selected based on interest (e.g. Bryophytes, Birds, geology, etc.) or region (Fredericton, Saint John, Acadian Peninsula, etc.)

3- Once you select a site, you will be provided with current information on the site (location etc.)

4- You are now ready to head to the field. Bring a field sheet and a friend and get collecting! Whether you are a birder, a botanist or even new to the naturalist community, there is a variety of information that needs to be collected. **All skill levels are welcome.**

5- Input your data on the website

To sum up, taking part in the New Brunswick Biodiversity Stewardship Program will give several long-term rewards for you and your community:

- Allow the New Brunswick government to make informed decisions on land use and development;
- Provide a greater appreciation for nature among the public;
- Increase the numbers of "citizen naturalists," who will give nature and environmental organizations a much greater voice in times of environmental crisis;
- Reduce our children's "nature deficit", which will benefit their mental and physical health throughout their lives; and,
- Raise the profile of New Brunswick's natural heritage in the national arena and provide an avenue for local issues to be brought to the national level.

I'm supporting the Biodiversity Stewardship Program. Are you?

Programme d'intendance de la biodiversité de Nature NB

Nature NB
Fredericton

Bonjour!

Quand est la dernière fois dont vous avez pensé que vous faisiez une vraie différence?

Quand est la dernière fois dont vous avez pensé que vous faisiez une vraie différence, tout en faisant quelque chose que vous aimez?

VOUS VOULEZ LE FAIRE PLUS SOUVENT?

Nature NB lance le programme d'Intendance de la Biodiversité au Nouveau-Brunswick; une initiative où vous pouvez contribuer à la conservation de l'héritage naturel du Nouveau-Brunswick. Le programme a deux objectifs principaux :

1. La mise à jour de la base de données du gouvernement provincial sur les Aires Écologiques Significatives. Cette base de données indique aux gouvernements et industries l'importance de ces sites (la diversité de la flore et la faune, etc.)
2. Intéresser les citoyens du Nouveau-Brunswick dans la communauté de naturalistes.

POURQUOI PARTICIPER?

Contrairement à certaines autres avenues, une base de données gouvernementale mise à jour aura un impact direct sur les résultats des Études d'Impacts environnementaux, et par conséquent, sur les exploitations futures et sur celles qui seront bloquées. Votre participation, par le biais de la collecte de données sur ces sites, se traduira par un appui accru aux importantes questions écologiques.

Nature NB, ainsi que nos partenaires, La Fondation pour la protection des sites na-

turels du Nouveau-Brunswick et le département de l'environnement, ont également intégré les zones importantes pour la conservation des oiseaux et les zones naturelles protégées dans notre programme. Les données recueillies sur ces sites seront incluses dans les bases de données de nos partenaires et seront par la suite ajoutées à des bases de données nationales. Ceci apportera nos enjeux sur la scène nationale.

COMMENT PARTICIPER?

- 1- Visitez Naturenb.ca et inscrivez-vous comme bénévole
- 2- Connectez-vous afin de choisir un site que vous aimerez visiter. Les sites peuvent être choisis par intérêt (plantes, animaux, géologie, etc.) ou par région (Fredericton, Saint Jean, la Péninsule acadienne, etc.)
- 3- Lorsque vous aurez fait votre choix, vous serez fourni de l'information sur le site (p. ex. direction, etc.)
- 4- Vous êtes maintenant prêt à participer. Emporter votre formulaire de terrain et un ami et commencer à faire la collecte de données. Il y a toute une gamme d'information à répertorier; que vous soyez botaniste ou ornithologue, ou même si vous êtes un débutant, il y a une place pour vous. **Tous les niveaux de compétence sont les bienvenus!**
- 5- Entrez vos données sur le site web

Pour conclure, prendre part au programme d'intendance de la biodiversité de Nature NB apporte plusieurs avantages :

- Mise à jour des données pour aider au gouvernement à prendre des déci-

Pour plus d'information, veuillez visiter NatureNB.ca ou composer le 506-459-4209

sions sur l'utilisation des terres et leur exploitation.

- Une plus grande appréciation de la nature parmi le grand public.
- Augmentation du nombre de notre communauté de naturaliste, ce qui nous donnera une voix plus forte en temps de crise.
- Le déficit de la nature sera réduit

pour nos enfants, ce qui sera bénéfique pour leur santé physique et mentale.

- Rehausser le profil du patrimoine naturel du Nouveau-Brunswick sur la scène nationale et offrir une avenue pour les problèmes locaux à être apportés à l'échelle nationale.

Moi, j'appuie le programme d'intendance de la biodiversité. Et vous?



Information updates coming!

Please note that Nature NB will be implementing a system to keep members and interested people informed about issues, events, notices that relate to biodiversity, habitats, nature education and species at risk in the province. We also want to keep people better informed of what Nature NB does. We will be using an e-news system, and will commence implemented this over the next few months, with the intent of having monthly e-mails sent out. Please let us know if you are interested: nbf@nb.aibn.com.

Des bulletins d'information en route!

Veuillez noter que Nature NB mettra en place un système d'information afin de tenir ses membres et autres personnes intéressées sur les enjeux, événements et notices reliés à la biodiversité, les habitats, l'éducation sur la nature et les espèces en péril de la province. Nous voulons aussi mieux vous informer sur les activités de Nature NB. Nous nous servirons d'un système électronique que nous mettrons en place au cours des prochains mois, avec l'intention d'envoyer un courriel tous les mois. Laissez-nous savoir si cela vous intéresse : nbf@nb.aibn.com.

Notes of a Wild Garden

G. U. Hay

Bulletin of the Natural History Society

ARTICLE III

NOTES OF A WILD GARDEN

By G.U. HAY

(Read before the Society, December 7th,
1897)

About ten years ago the idea occurred to me of planting a wild garden in which should be shown, as far as the conditions would warrant, the peculiarities and extent of the flora of New Brunswick. The garden plot covers an extent of nearly two acres and is well adapted for the purpose intended. It is situated about eleven miles from the city, on a broken piece of ground overlooking the St. John River. In one corner is a meadow, made up of alluvial deposit brought from the neighboring hills, and adapted for plants usually found on intervalles. Through this meadow flows a small stream fed by springs on the hills, which lie to the westward. The idea of planting a native arboretum was first suggested by finding in this meadow a group of small trees and shrubs eight in number, forming a pretty little arbor on the bank of the curving stream. The plants consisted of the cedar, the white and yellow birch, American ash or rowan-tree, water alder, mountain maple, balsam fir and black spruce. One could stand in the centre of this arbor and touch one-tenth of all our forest trees and shrubs. When nature had made such a beginning it was surely a broad hint for me to do the rest.

When the remainder of the two acre plot came to be explored, possibilities were found to exist for something more than an arboretum; and the idea of a wild garden gradually came, which might include most of our flowering plants, all

our native ferns, and perhaps in time a representative gathering of our mosses, lichens and fungi. Rising from the meadow toward the south, within the bounds of the plot, is a hill whose slope is covered with a young but quite ample growth of spruce, fir, birch, maple, etc., the deciduous trees largely prevailing, and giving to the soil each year an abundant supply of leaf mould. Half way up this hill in the centre of the grove is a depression, which catches the drainage of the slopes around it. The moist ground, cool shade, and northern exposure of this basin, forms an ideal spot for a fernery.

Thus there were provided a meadow and a grove, two very necessary adjuncts of a wild garden.

Crossing an intervening open space toward the south after leaving the grove, the top of the hill is reached. Here stands an aged white pine, the only survivor of a fire, which swept over the place some years before. The blackened trunk and upper branches extended imploringly, tell of its struggle for life. On this the soil is dry and poor, covered with a growth of small tees and heath plants. This is called Heath Hill. On the continuation of this knoll to the east stands a small summer cottage overlooking the St. John River and the Nerepis hills to the north. Sloping from the cottage toward the river is a cultivated field in which and along its borders may be placed those plants requiring full exposure to sunlight.

In this garden there have been about five hundred native species of flowering plants and ferns, many of which were in situ, while others have been planted during the last ten years; of these about ten per

From our Past

Selected by
Mary Sollows
Saint John



This excerpt is taken from an article published in 1897 in the Bulletin of the Natural History Society of New Brunswick, No. 17: 108-1138
(CONTRIBUTION FROM THE FREDERICTON NATURAL HISTORY SOCIETY.)
NOTES ON THE NATURAL HISTORY AND PHYSIOGRAPHY OF NEW BRUNSWICK.

cent have disappeared, or failed to grow through lack of proper conditions or the perils incident to long transportation, as the transfer of plants has been made chiefly in the summer months; so that not quite one-half of the flowering plants of the province can be seen in this space of nearly two acres. But little progress has been made in planting the grasses, sedges, rushes, and aquatic plants. The results in regard to the latter are especially disappointing, although considerable labor has been expended on them. The (at times) turbulent little stream has shown no disposition to be led into quiet ponds or stretches of pool. It has even carried away - root, stem and branch - the plants placed too confidently within the limits of its bed, and all attempts to secure its co-operation, or at least a passive non-resistance in the scheme have resulted in failure.

There is a larger representation of ferns in the garden than any other class of plants. Nearly all of the forty species and varieties found within the limits of the province were living and flourishing during the past summer. The trees and shrubs are also very well represented. Out of the eighty species found in the province, more than sixty are growing and in good condition, and in a short time I hope to have a complete representation of our forest trees and shrubs.

Four years ago, Dr. Saunders, of the Experimental Farm, sent me over one hundred plants representing, chiefly, the trees and shrubs of Western Canada and a few northern European species. These have been planted on the borders of the cleared spaces of the garden and are kept quite distinct from the native species. They, with a number of others, sent from Point Pleasant Park, Halifax, including the Heather (*Calluna vulgaris*) have grown very well, although but little care has been given them. These

will serve for comparison with similar native species as well as to illustrate the effect of our climate upon them.

Little or no attempt has been made to put plants in rows or beds according to their classification, the chief aim being to provide a natural habitat and surroundings as far as possible. The only exception to this was the treatment of weeds, a colony of which, for prudential reasons, I placed in a row beyond those pale of other plants. With a perversity characteristic of their tribe, they spurned such treatment and refused to grow.

Another family, which does not take kindly to cultivation, is the Orchids. Many of these, of which we have so many beautiful native species, affect a solitary habit and are found in bogs. Others love the rich mould of deep sheltered woods. Others such as the Calypso are rare or local in their occurrence.

In the future, I hope to present to the Society at the close of each season, a few notes embodying the results of observations, especially on the rarer species and those less susceptible of "cultivation," together with the time of coming into leaf, flower or fruit of certain species of plants which on account of their commonness have been generally accepted as the basis of observation. In making such observations, there is a great value in watching for results on the same spot of ground or the same plant, or one quite near it, from year to year. This I have endeavored to do after being assured that the plant has adapted itself to its changed conditions, and had been long enough in the garden to be relied on to furnish correct data. ...I have not hesitated to go outside the garden to make observations on plants more favorably situated for coming into leaf or bloom early, always choosing the same locality, and, in the case of perennials, the same plants from year to year.

The Spring is Sprung, The Grass is Ris...

Peter Pearce
Fredericton

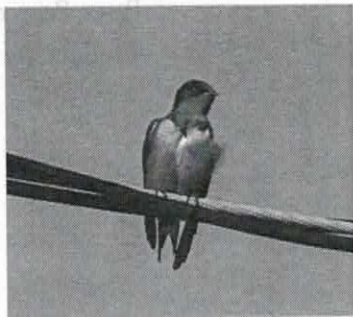
I wonder where the birdies is. It's a good question, pondered by the seasoned naturalist and increasingly asked by the casually-interested observer. It seems that there just aren't as many birds as there used to be. So it may come as no surprise to learn that according to recent authoritative estimates we have lost half of our songbirds in the last 40 years. Consider the following: The dawn chorus is but a faint echo of its former self; patches of forest interiors at the height of the birds' breeding season can be as quiet as a pharaoh's tomb; roadside utility wires are no longer lined with swallows gathering for their southward migration; and, to cite two non-songbirds, nighthawks and swifts seem to have been almost swept from summer-evening skies. Such are some of the changes I have witnessed during fairly engaged bird-watching in New Brunswick spanning 50-plus years. They are touched on in this retrospective which highlights selected species considered to have undergone declines of the most concern, starting with a guild of goatsuckers, swifts, swallows, and flycatchers – the aerial insectivores.

Today one rarely hears the "peent" calls and "Bronx cheers" of **Common Nighthawks** displaying over downtown Fredericton, or elsewhere for that matter. There are still plenty of flat-roofed buildings on which they once "nested", but perhaps the replacement of gravel roofs by tarred ones has made them less attractive. In the hinterland, even in open habitats that should be favoured by nesting nighthawks – such as recent forest clearcuts – the birds are hard to find, and I no longer regularly see cells of migrating nighthawks in late summer (but am encouraged that

other observers apparently still do). I now tend to think of that species as the "Uncommon" Nighthawk. **Eastern Whip-poor-will** populations are apparently in no better shape, perhaps because of habitat loss, thought to have been the cause of earlier declines of the closely-related **Nightjar** in Britain. But I have found that the whip-poor-will has long been rare in New Brunswick, probably because it is at the frontier of its breeding range here.

The **Chimney Swift** has gradually become the most conspicuously-absent aerial insectivore. Its plight is brought into focus at a well-known chimney on the UNB-Fredericton campus which once accommodated about 2 000 roosting birds. It is now unused although the structure remains unchanged. Standing forlornly nearby, a model chimney – complete with viewing panel, nest and sculptured bird – interprets a wonder of nature that can no more be enjoyed there. To be sure, a few swifts may still be seen foraging over the city, roosting and nesting in hidden places known only to themselves. But will they recover to their former numbers?

The widescale decline of the **Bank Swallow** is manifested in microcosm at an extensive Nashwaak Village sand quarry that has been worked for many decades. At one time the cliff faces there were riddled with the tunnels of several hundred nesting birds. Although ongoing quarrying has created many cliffs ideal for the birds, the nesting swallow colony has been reduced to about 35 pairs today, their tunnels huddled together on one isolated bluff. It is not clear why Bank Swallow populations have declined so precipitously but in Britain, where the



Barn Swallow
Photo by S. Miousse

bird is known as the Sand Martin, two crashes in the last 50 years are believed to have been caused by droughts on the birds' African wintering grounds. It's obvious that **Barn Swallows** and **Cliff Swallows** are also not nearly as common as they were. One suggested cause is a diminished availability of nesting sites. Yet there appear to be as many barns and other buildings still dotting the agricultural landscape as heretofore, despite the abandonment of small farms and the reversion of cleared land to forest. A large, traditional Cliff Swallow colony under a Fredericton bridge no longer exists and I have found familiar colonies elsewhere to be fewer and smaller.

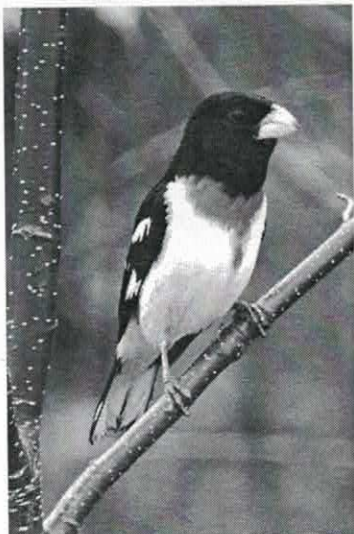
In my early bird-watching days in New Brunswick, **Purple Martins** were not uncommon. There was a large, well-known colony of 100-plus pairs at Island View where many apartment houses were fully occupied through the 1960s and '70s. It was in the mid-'60s that a survey of martins in New Brunswick was undertaken by Roy Hunter, who found 66 colonies, distributed across the south of the province. About two decades later, breeding by Purple Martins was confirmed in 65 squares in the province during the first Maritimes Breeding Bird Atlas (MBBA) project. Although "colony" does not necessarily equate with "square", the data did suggest little change in the population status of martins since Hunter's study. A further 20 years on, the species was confirmed as breeding in only about eight squares in the province by the end, in 2010, of the second MBBA exercise. Quite a change! At present I know of only two colonies in central New Brunswick, one at Gagetown perhaps on the brink of disappearance.

So much for the hawkers. As for the salliers, both the **Olive-sided Flycatcher** and the **Eastern Wood-Pewee** have become

noticeably scarce; I come across only one or two in the run of a typical bird-watching year. **Eastern Kingbirds** should be more easily encountered but I find even they have become less common.

One would think the decline of aerial insectivores would be closely related to changes in their food base. In that regard, for what it is worth, I recall that many years ago it was difficult to keep one's car windshield clean from insect impacts during a summer's drive – one seemed to be constantly buying washer fluid. It doesn't happen nearly as much today. And one learns that in Britain the motor-ing naturalist community was pressed into service to collect data to determine if there really has been a decrease in the aerial insect biomass. If so, pesticide use springs to mind as a likely cause. It is thought, too, that global warming may be influencing the peak timing of the seasonal emergence of insects, to which birds may not have become adjusted.

Moving on, I like to think of the **Wood Thrush** as a member of a New Brunswick quartet of broadleaved-forest songsters, with the **Black-throated Blue Warbler**, **Scarlet Tanager**, and **Rose-breasted Grosbeak**. Unfortunately, the thrush has suffered a severe decline apparently across a broad front in the recent past. Hereabouts, its voice has been virtually stilled and the grosbeak's song is heard far less often than a couple of decades ago. But it was the wood-warblers that provided the main contribution to the former dawn chorus. Among the two dozen or so species breeding in the province, budworm-following **Tennessee**, **Cape May**, and **Bay-breasted Warblers** were particularly numerous. It is because they were so common across the coniferous forest landscape that their near-absence is so noticeable today. Other species such as the **Blackpoll Warbler** and the



Rose-breasted Grosbeak
Photo by S. Miousse

Canada Warbler have also experienced significant population attritions. It was at the time of the last spruce budworm outbreak that sections of some roads in Miramichi country could be yellow with the carcasses of **Evening Grosbeaks**.

Surprised while gitting at roadsides, the birds had an uncanny knack of flying unerringly into the path of passing vehicles. During those years, hordes of grosbeaks used to overwhelm winter bird feeders: their scarcity today is a far cry from their abundance in the birds' heyday. But perhaps, since they also follow the budworm (unlikely as it might seem), they will stage a comeback when the insect strikes again.

Worth mentioning is a suite of blackbirds having different habitat requirements but sharing similar population losses over the last two or three decades. Grassland birds are reportedly in trouble everywhere, the **Bobolink** being the best example in our region. I witnessed its steady decline along my Jemseg Breeding Bird Survey (BBS, see below) route, evidently because of the habitat loss occasioned by new highway construction and conversion of fields for market gardening. With regard to another grassland bird, I failed in 2010, for the first time in many years, to find any breeding **Eastern Meadowlarks** at Fredericton's former ski hill at Springhill. In isolation that's not much to go on – just another small sign of its changing status. Among wetland birds, the **Rusty Blackbird** has become a species not readily found even if one successfully searches in the forest for patches of its particular breeding habitat. And time was when one expected to see small flocks of **Brown-headed Cowbirds** on spring migration. I now so infrequently run across even lone individuals at any time of the year. Brood parasitism by the cowbird was thought to be a significant factor in the decline of forest songbirds, possibly because habitat fragmentation

made their nests more accessible. Has the level of parasitism now changed?

Finally, a word about the peculiar case of the **House Sparrow**. In the early days of the Christmas Bird Count at Fredericton it was occasionally the second most numerous species recorded but it has now been reduced locally to a rump population of a few pairs in horse stables at Springhill. Urban, resident, alien – it is doubtful whether its extirpation would be greatly lamented. Interestingly, a different view is held in Britain where the bird is indigenous and its decline a matter of concern. There too, the reasons for its changing status are not clear.

To provide a quantitative context to the above comments I turned to the Canadian Bird Trends Web site, which gives population changes determined from BBS data. (The BBS is a roadside survey begun in the late 1960s in which birds are counted at 50 three-minute stops 0.8 km apart over a route of 40 km.) For a good sample size, the geographic frame of reference I chose was that part of the North Atlantic Forest bird conservation region in Canada – to wit, the Maritime provinces and Quebec south of the St. Lawrence River. The following tabulation, then, gives the statistically-significant negative trends for most of the species discussed, over three periods – 1968 to 2008 (first or only number), 1988 to 2008 (second number) and 1998 to 2008 (marked with an asterisk). "Trend" is the mean annual percent change in bird populations. It should be noted that a trend of only minus five percent results in a population decline of over 60 percent in 20 years, nearly 90 percent in 40 years.

It is interesting to note that most of the species cited are neotropical (long-distance) migrants and that trends in nearly all cases are greater in the recent 20 years than over the last 40.

Bank Swallow
Photo by S. Miousse



It seems likely that bird population declines are caused by a complex of factors peculiar to each species or to groups of species sharing food and habitat preferences and migration strategies. Undoubtedly, one element is negatively-impactive land management practices on

the birds' winter and summer ranges. Another might be a greater vulnerability of long-distance migrants to an increasing incidence of extreme weather events. Our birds face many hazards: for an excellent discussion of some, the reader is referred to Bridget Stutchbury's "Silence of the songbirds: How we are losing the world's songbirds and what we can do to save them", released in 2007 by HarperCollins Publishers Ltd.

In light of the foregoing it is not surprising that in its identification and rating of species at risk, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has assessed the population health of some of the birds mentioned above. Declared to be nationally "threatened" are Common Nighthawk, Eastern Whip-poor-will, Chimney Swift, Olive-sided Flycatcher, Canada Warbler and Bobolink. In addition, the Rusty Blackbird has been categorized as a species

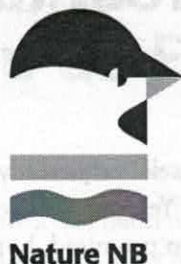
of "special concern" and the Eastern Wood-Pewee, Bank Swallow, Wood Thrush, and Evening Grosbeak have been assigned a high priority for assessment.

But enough of this "declinism". On the brighter side, many of our birds are holding their own, some even increasing here - one thinks of geese and Mallards, of starlings and crows, chickadees and bluebirds. Then there is welcome news of the establishment of southern newcomers such as Turkey Vulture, Tufted Titmouse, Carolina Wren, and Orchard Oriole as species breeding in the province. Global warming may well bring others to enrich New Brunswick's birdlife.

And so, the thrust of much of the above comment notwithstanding, there are still many occasions when all can seem to be tickety-boo in the world of birds. One's interception of a major passage of migrants is an example, a moment of excitement heightened by the prospect of realizing yet another really good annual compilation of birds seen. Irresistible rarity-seeking and the lure of the list will doubtless continue to keep the birding community both atwitter and informed on the status of our bird populations. At the same time, continued support of monitoring activities and conservation measures should help to put those species currently at risk on the path to recovery.

Thanks are due to the many skilled volunteers and coordinators who have participated in the BBS through the years. The information it generates is vitally important to the ongoing assessment of the health of our avifauna.

Statistically Significant Negative Trends		
Over three periods: 1968 to 2008, 1988 to 2008 and 1998 to 2008		
Species	1968-2008	1988-2008
Common Nighthawk	-5.0,	-10.6
Chimney Swift	-6.5,	-5.8
Bank Swallow	-6.5,	-13.4
Barn Swallow	-5.3,	-8.8
Olive-sided Flycatcher	-6.4*	
Eastern Wood-Pewee	-3.9,	-5.7
Wood Thrush	-5.4,	-14.1
Tennessee Warbler	-4.1,	-13.1
Bay-breasted Warbler	-1.7,	-6.7
Blackpoll Warbler	-9.0,	-9.3
Canada Warbler	-4.2,	-8.3
Bobolink	-4.8,	-7
Rusty Blackbird	-8.9	
Brown-headed Cowbird	-7.6,	-9.3
Rose-breasted Grosbeak	-2.7,	-7.2
Evening Grosbeak	-16.9*	
House Sparrow	-7.2,	-8.9
* 1998-2008		



NB Naturalist *le Naturaliste du N.-B.*

Positions open!

The *NB Naturalist* is hiring!

We have a number of positions (with very good pay = volunteer) open at this time. If you want to be part of a team of nature enthusiasts who can give a bit of their time and want to contribute to the publication of our magazine, please contact the current editor in chief.

Positions to be filled:

- Editor in chief
- Photographer
- Author
- Nature news contributor & compiler (birds, plants, you name it)

This magazine is a great way to help teach people about New Brunswick's natural history, and to share nature observations.

Nous embauchons!

Le *Naturaliste du NB* veut vous embaucher!

Nous avons un nombre de postes (avec un bon salaire de bénévole!) qui sont maintenant disponibles. Si vous aimez faire partie d'une équipe de passionnés de la nature et si vous avez un peu de temps à contribuer à la production du *Naturaliste du NB*, veuillez contacter la rédactrice en chef.

Les postes à combler :

- Rédacteur/rice en chef
- Photographes
- Auteurs
- Compileurs de la section Info Nature (oiseaux, plantes, etc.)

Le *Naturaliste du NB* est un excellent véhicule pour informer le public de notre patrimoine naturel néo-brunswickois et pour partager les observations sur la nature.

Please contact/ veuillez contactez

Sabine Dietz
sabine.dietz@bellaliant.net
506.536.7560

Danielle Smith
Programs Director
Fredericton

Nature NB - Update from the Fredericton Office

This is going to be an exciting year!

First, we are very happy to say that Vanessa is back from her Maternity Leave and the transition has gone smoothly. While we are sorry to say goodbye to Afton Conneely (Interim Executive Director), who has lead Nature NB admirably, we wish her all the best in her future endeavours. She has promised that she will attend our AGM on Grand Manan though. Will we see you there?

Our 2011 Summer Youth Nature Camps are almost upon us. Our returning Camp Director Elizabeth Giesbrecht has come up with an exciting fun-filled program with her Camp Counsellors Stephanie LeBlanc and Brittany Clifford. There are limited spaces still available. If you don't know where to send your little Camper, call the office at 459-4209 to see if Elizabeth can squeeze him/her in. The theme this year is 'Biodiversity Detectives' and it's not to be missed!

As you're gearing up for your summer trips, travels and expeditions, why not consider printing off one of our Biodiversity Stewardship field forms from our website and taking it with you? The Biodiversity Stewardship Program is

alive and well and is ready to accept your field data! Yes, our web portal has taken longer than promised, but it is available. Contact our Program coordinator at biodiversitynb@naturenb.ca if you have any questions about the program.

Are you an experienced Naturalist with a passion for teaching? Why not become a Mentor? We are setting up a **Mentor Network** throughout the province in an effort to ensure that there is adequate support for members of the public who want to join the Naturalist Community. You see, believe it or not, you naturalists are an intimidating bunch with your specialised knowledge, unusual language and vast networks of other knowledgeable people. We see the Mentor Network as a way of removing that barrier. Please consider becoming a Mentor. Help to grow the Naturalist Community throughout the province. Email us at the same address for more information.

Well, that's a broad overview of what's going on. See our Facebook page (Nature NB), follow us on Twitter (@naturenb) or our website: www.naturenb.ca for updates and more details!

Have a great summer!

Nature NB - Mise à jour du Bureau de Fredericton

Danielle Smith
Directrice des programmes
Fredericton

Ce sera une année passionnante! Nous sommes très heureux de vous rappeler que Vanessa est de retour de son congé de maternité et la transition s'est passée sans problème. Nous regrettons le départ de Afton Conneely (directrice générale par intérim) qui a mené Nature NB de façon admirable. Nous lui souhaitons le meilleur dans ses projets futurs. Elle nous a promis qu'elle viendrait à notre Assemblée Générale Annuelle à Grand Manan. Y serez-vous?

Nos Camps de Nature de Jeunesse d'Été 2011 arrivent à grands pas et notre directrice des camps, Elizabeth Giesbrecht, avec ses conseillères de camp Stephanie LeBlanc et Brittany Clifford, a préparé un programme passionnant et amusant. Il reste un nombre limité de places, donc si vous ne savez pas trop que faire avec votre petit campeur, vous pouvez appeler le bureau au 459-4209 et Elizabeth fera de son mieux afin de lui trouver une place. Le thème cette année est «les détectives de la biodiversité». Certainement, à ne pas manquer!

Quand vous préparerez vos voyages d'été, pourquoi ne pas visiter notre site Web et imprimer un de nos formulaires du programme d'intendance de la diversité et de l'apporter avec vous? Le programme d'intendance de la biodiversité est bel et bien en branle et est prêt à accepter vos données! Oui, notre portail Web

a pris plus de temps que prévu, mais il sera accessible en ligne à partir de juin. Si vous avez des questions au sujet de ce programme, vous pouvez contacter notre coordinatrice par courriel au: biodiversitynb@naturenb.ca.

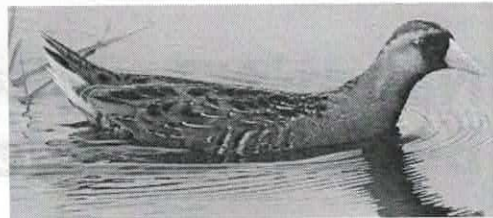
Êtes-vous un naturaliste chevronné avec une passion pour l'enseignement? Pourquoi ne pas devenir un mentor? Nous organisons un réseau de mentor à travers la province afin d'appuyer ceux qui voudraient s'intégrer à la communauté de naturalistes. Croyez-le ou non, vos connaissances spécialisées, incluant la manière dont vous vous exprimez, et votre vaste réseau de spécialistes, peuvent intimider bien des gens. Nous pensons que ce réseau de mentors sera un moyen d'éliminer cet obstacle. Prière de considérer devenir un Mentor, ce qui contribuera à la croissance du nombre de naturalistes et à la connaissance de nos milieux naturels. Pour plus d'informations, vous pouvez nous contacter par courriel (biodiversitynb@naturenb.ca).

Ceci n'était qu'un bref aperçu de nos activités. Afin de rester à jour, visitez notre page Facebook (Nature New Brunswick), suivez-nous sur Twitter (@naturenb) ou allez directement sur notre site Web pour plus de détails et de mises à jour (www.naturenb.ca).

Passer un bel été!



Bluets
Photo by J. LeBlanc



Sora
Photo by M. Cormier

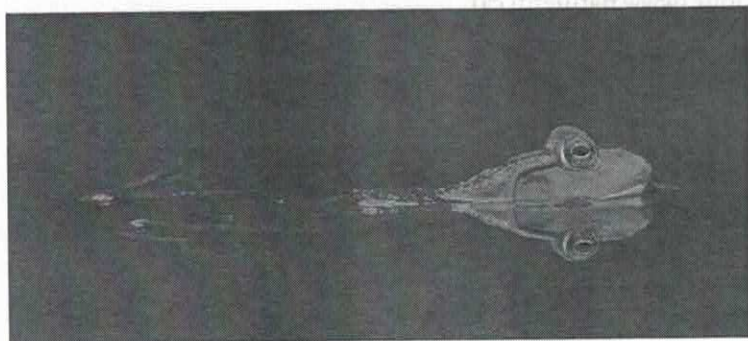


Chipmunk
Photo by D. Allain-Mercier



Eastern Newt, eft stage
Photo by R. Lapointe

Green Frog
Photo by P. Mansz



Survey: The *NB Naturalist* is Nature NB's magazine. Here we share information and news about nature as well as our organization (www.naturenb.ca/nbnaturalistnewsletter.aspx). Members receive the magazine for free, four times per year. It is entirely produced by volunteers.

We would like to evaluate how we produce and deliver this publication, as its production is expensive, and a great number of volunteers are required in the process.

Please take 10 minutes to respond to the on-line survey at <http://www.surveymonkey.com/s/ZDJ9NT6>.

If you would like a hard copy of the survey, please contact Vanessa at 506-459-4209 or nbfn@nb.aibn.com

Questionnaire : Le *Naturaliste du NB* est publié par Nature NB. C'est le moyen par lequel nous partageons des informations concernant la nature ainsi que notre organisme (www.naturenb.ca/nbnaturalistnewsletter.aspx). Les membres reçoivent ce journal gratuitement, quatre fois par an. Cette revue est produite complètement par des bénévoles.

Nous aimerions évaluer comment nous produisons et distribuons le journal. La production du *naturaliste du NB* est dispendieuse, et un grand nombre de bénévoles est requis. Veuillez prendre 10 minutes afin de remplir le questionnaire qui se trouve ici : <http://www.surveymonkey.com/s/ZDSQVVG>. Si vous préférez recevoir un exemplaire sur papier, veuillez contacter Vanessa au 506-459-4209 ou envoyez-lui un courriel au nbfn@nb.aibn.com

Red Fox kits
Photo by P. Mansz



Checklist of NB Birds

Liste des oiseaux du N-B


Nature New Brunswick's new bird checklist is now available. It includes New Brunswick bird species (413) currently accepted by the New Brunswick Bird Records Committee (NBBRC); the nomenclature (English, French and scientific) and the taxonomic sequence follow the American Ornithologists' Union (2010); codes indicate the status of each species in New Brunswick (NBBRC).

The bird checklist was developed with help from members of the committee, and special thanks go to Roger LeBlanc.

Please order your printed checklist (\$2 plus shipping) from Nature NB (506-459-4209), by e-mail: nbfn@nb.aibn.com. Once the checklist is on our website, you can also print off copies yourself.

La liste des oiseaux du Nouveau-Brunswick de Nature NB est maintenant disponible. Le Comité des mentions d'oiseaux du Nouveau-Brunswick (CMONB) a accepté 413 espèces d'oiseaux. La nomenclature utilisée et l'ordre taxonomique suivent l'American Ornithologists' Union (2010). Les codes utilisés indiquent le statut de chaque espèce au Nouveau-Brunswick (CMONB). La liste fut développée avec l'aide de membres du comité. Un merci spécial à Roger LeBlanc.

Vous pouvez commander votre copie de la liste (2\$ plus les coûts de livraison) par téléphone (506-459-4209), ou par courriel nbfn@nb.aibn.com. Une fois que la liste se retrouve sur notre site web, vous pourrez aussi l'imprimer vous-même.



CHECKLIST OF
**New Brunswick
Birds**
2011

This checklist includes all 413 bird species currently accepted by the New Brunswick Bird Records Committee. The names are those adopted by the American Ornithologists' Union as of 2010. Observations of any species not on the list or classed as accidental should be documented by sending written details, photos, etc. to the N.B. Bird Records Committee (address and forms available at <http://personal.nbnet.nb.ca/maryspt/BRC/index.html>).

LEGEND	
A Accidental (records in no more than 5 years of 50)	M Migrant – uncommon to numerous
B Breeds annually – uncommon to numerous	m Migrant – rare but annual
b Breeds – rare	R Very rare (not expected annually)
* Infrequent or exceptional breeder (in last 50 years)	O Origin debatable
= Former breeder	S Slight record(s) only
	X Extinct or extirpated

Name _____


Date _____ Location _____

Date _____ Location _____

Date _____ Location _____

Date _____ Location _____

Nature NB is a non-profit, charitable organization whose mission is to celebrate, conserve and protect New Brunswick's natural heritage. It represents individuals and 12 local clubs throughout the province.



LISTE DES
Oiseaux DU
Nouveau-Brunswick
2011

La liste qui suit, inclut les 413 espèces d'oiseaux acceptées, à date, par le Comité des mentions d'oiseaux du Nouveau-Brunswick. La nomenclature est celle préconisée par l'American Ornithologists' Union en date de 2010. L'observation d'une espèce ne figurant pas sur cette liste, ou encore suivie de la mention accidentelle, devrait faire l'objet d'un rapport écrit détaillé accompagné de photos, d'enregistrement etc., au Comité des mentions d'oiseaux du Nouveau-Brunswick (l'adresse du comité et un formulaire de rapport sont disponibles au <http://personal.nbnet.nb.ca/maryspt/BRC/index.html>).

LÉGENDE	
A espèce accidentelle (observée dans pas plus de 5 des 50 dernières années)	m migrateur, rare mais annuel
B nicheur annuel – peu commun à abondant	R espèce très rare ou inusitée (pas trouvée chaque année)
b nicheur – rare	O origine contestable, mais possibilité raisonnable d'oiseaux d'origine sauvage
* nicheur exceptionnel (dans les derniers 50 ans)	D espèce non documentée par une photo ou un spécimen
= espèce qui nichait autrefois	X espèce disparue ou extirpée
M migrateur, peu commun à abondant	

Nom _____

Date _____ Endroit _____

Date _____ Endroit _____

Date _____ Endroit _____

Nature NB est un organisme de bienfaisance à but non-lucratif qui a comme mission la célébration, la conservation et la protection du patrimoine naturel du N-B, par l'éducation, le réseautage et la collaboration.

Warren Coleman
Fredericton

"I am struck with the pleasing friendships and unanimities of nature, as when the lichen on the trees takes the form of their leaves." - Henry David Thoreau in "Excursions" (1863).

Figure 1. The epiphytic lungwort lichen *Lobaria pulmonaria* in Mactaquac Provincial Park. Favorite trees for this lichen in the Park include largetooth aspen and red maple. Photo by W. Coleman



The "Other Lungwort": An Early Warning Lichen in New Brunswick?

Although Henry Thoreau expressed a "calm trust in the future", today he might find it difficult to locate his lichens in the woods around Concord, Massachusetts due to the extinction of local species (Primac et al. 2009). Fortunately, we can still find leafy lichens such as the lungwort lichen (*Lobaria pulmonaria*) clinging to trees in New Brunswick (Figure 1). However, has the lungwort lichen evolved a flexible strategy to deal with environmental change?

A SUCCESSFUL "ETERNAL TRIANGLE"?

Evolution over millions of years has molded the lungwort lichen into a successful organism composed of three

closely integrated life forms: a fungus, a green alga, and a blue-green alga.

Each partner plays a crucial role in support of this composite lichen.

- 1) A photosynthetic partner (a photobiont) that is a green alga (*Dicthyochloropsis reticulata*). It resides in the thallus or "leaf" of the lichen.
- 2) Another photobiont, the blue-green cyanobacterium (*Nostoc*), dwells in "warts" (cephalodia) on the lower thallus surface and fixes nitrogen (Jordan 1970; Millbank and Kershaw 1970).
- 3) A fungal partner (a mycobiont). This fungus (an ascomycete) provides a distinct morphological framework composed of hyphae.

These organisms provide the lungwort with its nutritional needs by capturing sunlight, absorbing nutrients and water, and fixing atmospheric nitrogen. To be truly successful, however, an organism must be able to propagate and distribute its offspring.

THE LONG AND THE SHORT OF PROPAGATION

The lungwort lichen has one sexual and two asexual ways to propagate. To see these clearly, you will need a 10X hand lens. If you looked at the edges of a "leaf" (called a thallus by botanists), you might notice the largest reproductive structures produced by this lichen: cup-shaped fruiting bodies called apothecia (Figure 2).

Representing the sexual phase of a lungwort's life cycle, apothecia emerge in the spring and are functional throughout the year. In the woods at Mactaquac Provincial Park, an apothecium can

grow to two millimeters in diameter and may contain millions of fungal spores (called ascospores) in the upper fertile layer. This cup-shaped fruiting body is ideally located for the dispersal of the micron-sized spores over hundreds of kilometres by wind. However, the green and blue-green algae must be present at the spore's final destination if these organisms are to develop into a new lungwort lichen (Denison 2003).

For short-range dispersal up to a couple hundred metres, the lungwort produces vegetative offspring (called soredia) on the lobe margins and along thallus ridges. These propagules commonly occur in small masses of tissue called soralia (Figure 3) that burst through or "erupt" from the internal region of the thallus. The soredia are composed of algal cells surrounded by fungal filaments and form an efficient reproductive package.

The isidia are the second short-range vegetative propagule produced on thalli surfaces (Figure 3). These tiny cylindrical reproductive units are also outgrowths of the thallus and contain fungal and algal cells. They are easily detached by gently brushing a drying thallus. Although wind or rain readily disperse isidia, research has indicated that epiphytic lungworts on a source tree (Walser 2004) could not colonize other trees that were located beyond 300 metres. Nevertheless, the lungwort lichen relies heavily on its vegetative propagules for multiplication and dissemination (Denison 2003).

IS THE LUNGWORT LICHEN PREPARED FOR THE FUTURE?

From an evolutionary perspective, sexual propagules allow different genotypes to exist with an increased chance of survival in a changing environment. In other words, the sexual phase represented by apothecia supports genetic diversity that

allows the lungwort to adapt and evolve. On the other hand, production of vegetative propagules such as soredia or isidia is a successful evolutionary strategy for well-adapted genotypes in stable habitats (Denison 2003). We can conclude that the lungwort lichen has evolved a number of successful and flexible reproductive strategies. However, will they be enough?

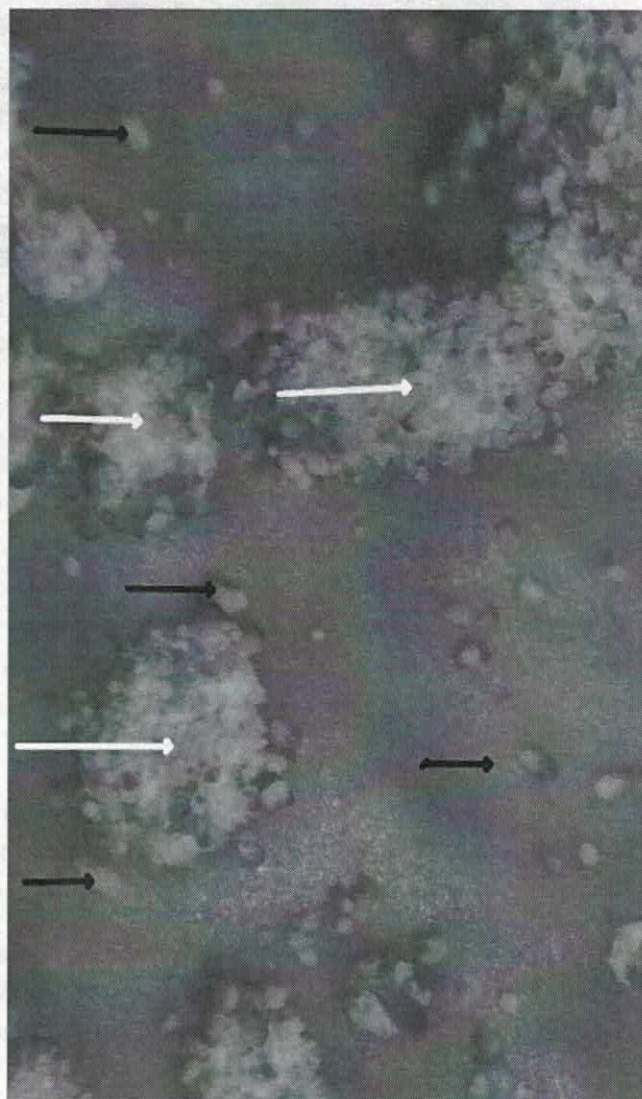
A GREEN CANARY?

We may be exposing lungwort populations to their most serious threats since their ancestors evolved over 400 million years ago (Taylor et al 1997). A check of lungwort distribution in Europe pinpoints multiple problems. In many areas, this lichen is rare or extinct due to intensive forestry practices (that is, loss of "habitat continuity"), air pollution, and acid rain (Aptroot and Zielman 2004; Walser 2004).

In New Brunswick, the lungwort lichen may not be immune to these threats. We simply need to look at other lichens that once inhabited New Brunswick and are now thought to be extirpated, such as the boreal felt lichen (Cameron 2004). If we are

We can determine apothecia maturity by colour. Tan fruiting bodies are immature while reddish-brown apothecia are mature and discharge ascospores. Dark brown or black fruiting bodies are empty.

Figure 2. A 2 millimeter diameter, reddish-brown apothecium (white arrow) on the margin of a lungwort lichen thallus. The white "eruptions", called soralia (black arrows), are 8 to 10X smaller than the apothecium and contain the two asexual reproductive structures. Photo by W. Coleman



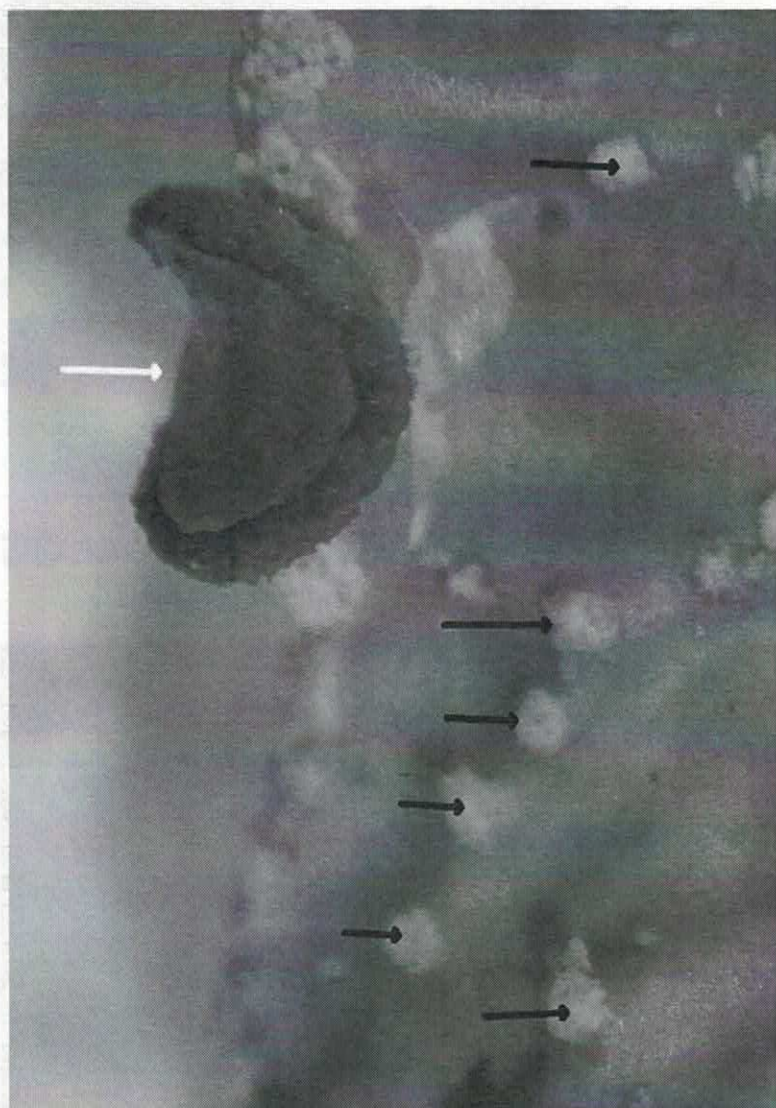


Figure 3. "Eruptions" on the thallus surface (soralia, white arrows) contain short-range vegetative propagules called soredia and isidia. Single, cylindrical shaped isidia (black arrows) are also visible.
Photo by W. Coleman

to prevent future extirpations, we will need to temper our "calm trust in the future" with an active environmental stewardship. Since *Lobaria* species "are good indicators of rich, unpolluted, and often very old forests" (Brodo et al 2001), the healthy appearance of this lichen in Mactaquac Provincial Park is encouraging.

For an overview of *Lobaria pulmonaria* as well as a brief outline of medicinal uses, go to http://en.wikipedia.org/wiki/Lobaria_pulmonaria

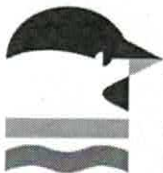
For over 100 records of *L. pulmonaria* dating back to the 1800s in ten of the fifteen counties in New Brunswick, go to the New Brunswick Museum online at <http://www.nbm-mnb.ca>

The Museum records indicate that habitats for lungwort lichen include different trees (living and dead) found in hardwood stands, mixed woods, or cedar forests - as well as the occasional rock outcrop.

Stephen Clayden, a Research Curator at the museum, has contributed significantly to observations of *L. pulmonaria* in New Brunswick. He would be pleased to assist anyone interested in lichens. Museum staff can be contacted toll free at 1-888-268-9595 or by e-mail at nbmuseum@nbm-mnb.ca

References

- Aptoot, A. and R. Zielman. 2004. *Lobaria amplissima* and other rare lichens and bryophytes on lava rock outcrops in the Eifel (Rheinland-Pfalz, Germany). *Herzogia* 17:87-93.
- Brodo, I.M., S.D. Sharnoff and S. Sharnoff. 2001. *Lichens of North America*. Yale University Press, New Haven. 795pp.
- Cameron, R. 2004. A second location for the rare Boreal Felt Lichen in Nova Scotia. *Evansia* 21(1):40-42.
- Denison, W.C. 2003. Apothecia and ascospores of *Lobaria oregano* and *Lobaria pulmonaria* investigated. *Mycologia* 95:513-518.
- Jordan, W.P. 1970. The internal cephalodia of the Genus *Lobaria*. *The Bryologist* 73(4): 669-681.
- Millbank, J.W. and K.A. Kershaw. 1970. Nitrogen metabolism in lichens. III. Nitrogen fixation by internal cephalodia in *Lobaria pulmonaria*. *New Phytologist* 69: 595-597.
- Primack, R.B., A.J. Miller-Rushing and K. Dharaneeswaran. 2009. Changes in the flora of Thoreau's Concord. *Biological Conservation* 142: 500-508.
- Taylor, T.N., H. Hass and H. Kerp. 1997. A cyanolichen from the Lower Devonian Rhynie chert. *American Journal of Botany* 84(8): 992-1004.
- Walsler, J.-C. 2004. Molecular evidence for limited dispersal of vegetative propagules in the epiphytic lichen *Lobaria pulmonaria*. *American Journal of Botany* 9(8): 1273-1276.



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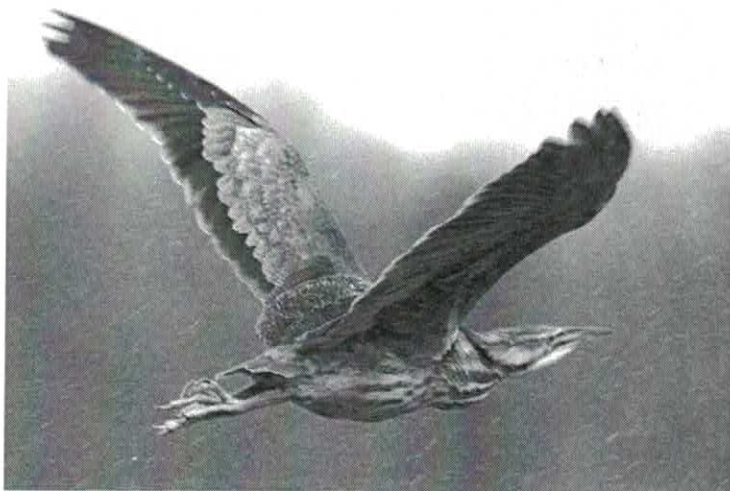
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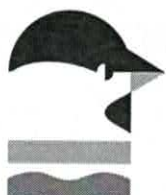
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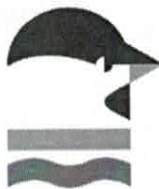
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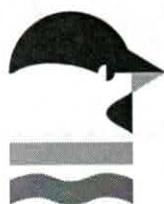
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